

REMARKS

In view of the above amendments and following remarks, further consideration of the rejections contained in the Final Office Action dated October 4, 2007 is respectfully requested.

In the Response filed December 26, 2007, Applicants explained how claim 25 was definite and in fact properly enabled by the present specification. This discussion is incorporated herein by reference.

In reply, in the Advisory Action mailed January 23, 2008, the Examiner stated that “a careful review of Applicants’ specification, paragraph [0077] does not provide support for the inclusion of noise detector 10. Paragraph [0077] in its entirety states...” etc. However, the Examiner is referring to the wrong paragraph.

The original specification submitted with the present application has a numbered paragraph [0077] beginning at line 12 of page 39. This paragraph immediately precedes the description of the third embodiment. The second embodiment, which includes Fig. 17, is described in paragraph [0077] of the original specification as follows:

[0077] Note that, in the second embodiment, a case where the feedback system in which the control signal is generated based on the error signal output from the error detector is used as a control circuit of the control section has been described. An excellent noise reduction effect can be obtained also in a case where the noise reduction apparatus according to the second embodiment additionally includes the noise detector described in the first embodiment, and the known feed forward system for generating the control signal based on the output signals from the noise detector and the error detector is used as the control circuit. Note that the same can be applied to third to fifth embodiments described below.

As such, it can be seen that Applicants’ arguments as set forth on page 2 of the prior Response are completely correct, and that the claims are properly supported. Indication of such is respectfully requested.

Further, in the Final Office Action the Examiner has rejected claims 17-36 as being anticipated by Sheplak et al., U.S. patent No. 6,782,109 (Sheplak). Claim 17 as amended above recites that a housing is to be attached to a surface of the wall so as to face an external noise source and block a noise propagation path by generating an enclosed space for noise reduction between the housing and the wall. A loudspeaker to be attached to the housing faces the external noise source and thus blocks the noise propagation path, and radiates sound into the enclosed space. A sound detector is placed within the enclosed space for detecting sound propagated from the external noise source through the loudspeaker.

By enclosing this space for noise reduction by the wall and the housing, the problem of mutual interference with sound radiated from an adjacent housing is resolved. In other words, first the space is enclosed, and sound that is radiated into the enclosed space will not leak therefrom to the outside. A sound that is radiated within the housing is not detected by a sensor in any adjacent housing, and the noise can be effectively reduced.

By attaching the loudspeaker to the wall so as to face the external noise source, blocking the noise propagation path, noise is propagated into the enclosed space by vibration of a diaphragm of the loudspeaker. By having the loudspeaker radiate sound into the enclosed space, as with the noise, control sound is propagated into the enclosed space through the vibration of the diaphragm of the loudspeaker. Because the noise that is propagated into the enclosed space through the loudspeaker is propagated by the same diaphragm as the control sound, a wave front of noise substantially coincides with that of the control sound. As such, noise can effectively be reduced over a wide area within the enclosed space.

By the sound detector being placed within the enclosed space, the sound detector is not interfered with by sound that is radiated from another housing, further.

Thus the present invention provides the significant effect that while mutual interference of sound is eliminated, noise can be effectively reduced over a wide area by causing the wave front of the noise to coincide with that of the control sound.

The cited patent to Sheplak discloses a structure for absorbing noise by using resonance. It does not disclose an enclosed space, but rather discloses a structure in which a gap 1712 is

provided in order to absorb noise by resonance therein. Nor does Sheplak disclose a loudspeaker that is to be attached to the housing so as to face the external noise source, thereby blocking the noise propagation path, and radiate sound into the enclosed space. That is, Sheplak does not disclose structure that causes the wave front of noise to coincide with that of the control sound. Rather, Sheplak discloses radiating the control sound toward the side toward which noise comes in, that is, in a direction opposite to that of the present invention. With such structure, the noise and control sound are not propagated through the same medium (a diaphragm). Thus, the wave front of the noise cannot be caused to coincide with that of the control sound.

Sheplak also does not disclose the sound detector being placed within the enclosed space. In Sheplak, the sound detector is placed outside of the chamber 1708.

Accordingly, there is insufficient structure in Sheplak so as to meet the limitations of claim 17. Sheplak does not disclose or provide any reason for modification of its structure that would result in the present invention as claimed. That is, it does not disclose structure having the effect of eliminating the mutual interference of sound at the same time that noise is effectively reduced over a wide area by causing the wave front of the noise to coincide with that of the controlled sound, as is the case with the structure of claim 17 as amended above.

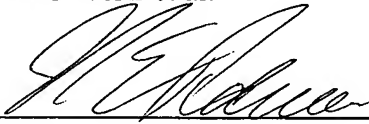
Accordingly, it is respectfully submitted that all of the claims which are now pending in the present application clearly patentably define over Sheplak. Indication of such is respectfully requested.

The Examiner's attention is further directed to the accompanying Information Disclosure Statement.

In view of the above amendments and remarks, it is submitted that the present application is now in condition for allowance, and the Examiner is requested to pass the case to issue. If the Examiner should have any comments or suggestions to help speed the prosecution of this application, the Examiner is requested to contact Applicants' undersigned representative.

Respectfully submitted,

Isao KAKUHARI et al.

By: 

Nils E. Pedersen
Registration No. 33,145
Attorney for Applicants

NEP/nka
Washington, D.C. 20006-1021
Telephone (202) 721-8200
Facsimile (202) 721-8250
February 11, 2008